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Implement & Tractor

The business magazine of the farm and industrial equipment industry April 1988

Let's Make It Harder for Thieves page 25

SHOOTING FOR BETTER SHOP PERFORMANCE

page 17

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IMPLEMENT & TRACTOR
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Subscription Information: Implement & Tractor is edited for persons in the farm and industrial equipment industry who function in the areas of retail sales and service, distribution sales and service, marketing, engineering, financing, manufacturing and general management. Subscription prices: U.S. and Canada one year — $15, three years — $30. Single copies, $3.50, except Annual Statistical Number, $4; Product File issue, $8; Red Book issue, $8. Extra charge for service on back issues. Allow 6-8 weeks for change of address and new subscriptions.

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ISSN 0019-2953 $8.00 + 0.00

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Farm Press Publications, Inc.

I&T 100 YEARS OF LEADERSHIP

Implement & Tractor

The business magazine of the farm and industrial equipment industry.

April 1988 • Vol. 103 • No. 5

On Our Cover

Foreman Ron Eastwood (left) and technician Brian Cornett work at reassembling the rear end of an IH 1086 in the shop of Knecht Equipment, Louisburg, Kan. I&T asked a group of dealers to cite recent moves they had made to improve productivity and profitability.

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Features

13: **Industry service** executives say problem areas are going to improve. Technicians are getting better but need more training. One hitch: Low sales volumes have kept dealers from investing in high-level diagnostic equipment.

17: **Making the shop** more productive and profitable is not always a massive restructuring. Sometimes dealers can make things better with some unspectacular moves. One essential is the dealer's attention and concern.

20: **Tractor tire update:** Low-vibration types surge ahead. This and other trends discussed in this feature by Frank Buckingham.

25: **A survey of dealers** revealed many ways to prevent or make it difficult for equipment thieves to walk or drive off with valuable merchandise. Who's the loss prevention manager at your dealership?

26: **On most stolen goods,** thieves can expect to get about one-tenth of the item's market value, but it's different with farm equipment, for which thieves usually get 50 percent of market value.

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IMPLEMENT & TRACTOR (USPS 461-750, ISSN-0019-2953) is published monthly, except combined November/December issue, and March and October, when two issues are published by Farm Press Publications, Inc., P.O. Box 1420, Clarksdale, Mississippi, and additional mailing offices. POSTMASTER: Send Form 3579 to P.O. Box 1420, Clarksdale, Mississippi 38614.

Retail Sales Maintain Strong Pace in February

Retail sales of tractors and several types of farm equipment continued to show strength in February, according to the flash report of the Farm & Industrial Equipment Institute. Every category was up, with the most significant increase shown among tractors of from 40 to 99 horsepower. Dealers sold 2,197 of them in February, a 67 percent improvement on the same month in 1987.

Unit Retail Sales

	February			January-February		
Equipment	1988	1987	% Change	1988	1987	% Change
Farm Wheel Tractors:						
2-Wheel Drive						
Under 40 HP	2,572	2,478	3.8	5,604	5,430	3.2
40 & Under 100 HP	2,197	1,317	66.8	4,574	3,385	35.1
100 & Under 140 HP	244	116	110.3	754	469	60.8
140 HP & Over	581	206	182.0	1,828	854	114.1
Total 2-Wheel Drive	5,594	4,117	35.9	12,760	10,138	25.9
4-Wheel Drive						
Under 200 HP	45	35	28.6	111	66	68.2
200 HP & Over	100	55	81.8	214	145	47.6
Total 4-Wheel Drive	145	90	61.1	325	211	54.0
Total Farm Wheel Tractors	5,739	4,207	36.4	13,085	10,349	26.4
Combines (Self-Propelled)	220	72	205.6	822	238	245.4
Balers (Bales under 200 lbs)	166	101	64.4	354	335	5.7
Forage Harvesters (Shear Bar Type)	88	48	83.3	151	133	13.5
Mower Conditioners	367	259	41.7	656	653	.5

White to Build Tractors for Deutz-Allis Corp.

Deutz-Allis has signed a letter of intent with Allied Products Corp. under which Allied's White-New Idea Div. will produce a line of tractors under Deutz-Allis specifications.

Under the four-year agreement, White-New Idea will make tractors of over 150 horsepower at its Coldwater, Ohio, facility. The arrangement is subject to final approval June 30 by both companies' boards.

The new tractor line will incorporate Deutz air-cooled engines, Deutz-Allis styling and White-New Idea drivelines, according to a statement by both firms. Engineering on the tractor line begins immediately, with production expected to start in the second quarter of 1989.

Briefly...

Kubota Tractor Corp., Compton, Calif., has named Ron H. Lytle to the post of senior vice president of sales and marketing. He had been vice president of sales.

Massey Combines Corp. Passes into Receivership

Massey Combines Corp. of Brantford, Ont., and Urbandale, Iowa, has halted operations after defaulting on its debt agreements. Peat, Marwick Ltd. of Toronto has been appointed as receiver of the company by the Ontario Supreme Court.

At press time, small staffs retained by the receiver were at work in both locations to attend to current activities such as parts supply and warranty administration. Some workers were expected to be called back to the Brantford plant to produce some replacement parts and complete some work in progress.

Massey Combines Corp. was formed in 1985 as a spin-off from Varity Corp., which owns 45 percent of its shares and has recently written the shares' value down to zero. Other owners are the Ontario and Canadian governments and some U.S. and Canadian banks. MCC owes 38 lenders a total of $290 million Canadian (or $231 million U.S.) and has assets estimated at about $200 million.

Historically, the Massey combine line has had a North American market share of 15 to 16 percent, with its greatest strength in Canada. In 1987, Canadian combine sales fell drastically for the entire industry.

Massey Combines Corp. was created with considerable debt and with responsibility for providing some cash for the underfunded pensions of approximately 4,000 retirees. The company had developed some innovative approaches to marketing used combines in which it had a position, but these efforts were insufficient to keep the company operative.

Gehl Buys Line of Rough-Terrain Forklifts

Gehl Co., West Bend, Wis., has acquired "certain product assets" of TCI Power Products, Yankton, S.D.—a line of rough-terrain forklifts and attachments, and a grader. TCI is a limited partnership.

According to Bernard Neilsen, president of Gehl, this is the "most aggressive" of Gehl's major acquisitions since 1985 and the first purely industrial one.

The 60,000-sq.-ft. plant at Yankton will continue producing the line, to be called Gehl Power Products. Other industrial products marketed by Gehl include skid-steer loaders and an offshore-built mini-excavator.

Rough-terrain, telescoping-boom forklifts are used in construction to move building materials around construction sites.

Pace of Dealership Closings Is Down

Every six months since 1981, the Farm Equipment Manufacturers Assn. has conducted a "dealers-out-of-business" survey among managers of all U.S. and Canadian farm and industrial equipment dealers associations.

The latest release from FEMA indicates that 123 dealerships closed their doors in the second half of 1987, compared with 177 in the same six-month period of 1986. Close-ups in the full year of 1987 were 303, down from the 483 reported for 1986 and 728 for 1985.

Because not every dealer association provides data every time the survey is taken, it cannot be considered a precise measure of dealer attrition, but it is the only survey available on the subject. Associations which did not participate in the latest study were: Alberta-British Columbia, Carolinas, Deep South, Far West, Mid-South, Pacific Northwest and Virginia.

All participating associations reported 37 new dealerships in the six-month period.

	1983 1st six mos.	1983 2nd six mos.	1984 1st six mos.	1984 2nd six mos.	1985 1st six mos.	1985 2nd six mos.	1986 1st six mos.	1986 2nd six mos.	1987 1st six mos.	1987 2nd six mos.	Total for 84 mos.
Deere	18	21	24	39	57	56	54	33	37	22	414
Case/I.H.	52	28	35	60	158	87	66	36	33	16	832
M.F.	38	16	22	17	24	35	27	15	16	11	365
Deutz/Allis	18	15	22	11	25	38	39	9	15	22	298
Ford	15	16	17	31	32	32	32	14	25	24	295
White	14	15	16	13	18	17	11	13	5	7	185
Others	11	6	5	5	9	9	11	4	7	6	97
Shortlines	14	11	22	21	30	21	35	36	20	11	285
Unidentified	8	9	14	5	10	70	31	17	22	4	256
	188	137	177	202	363	365	306	177	180	123	3,027*

*The total figure rises to 3,073 when 46 closeouts in an unspecified period of 1984 are included. The total also includes closed dealerships in 1981 and 1982, not shown in this table.

Briefly...

Stockholders of Speed King Industries, Inc., Dodge City, Kan., and CrustBuster, Inc., Spearville, Kan., have acquired the Hamby Co., Plainview, Texas. Hamby produces tillage tools and rotary mowers.

Farm equipment imports exceeded exports in 1987 by $255 million, according to U.S. Dept. of Commerce data. Exports were up, from $1.47 billion in 1986 to $1.58 billion last year, but imports increased at a faster pace, from $1.63 billion in 1986 to $1.84 billion in 1987.

The Mar-Del-Va Farm & Power Equipment Assn. has changed its name to the Mid-Atlantic Equipment Dealers Assn. Its members are dealers in parts of West Virginia and Virginia, Maryland and Delaware. Its office is located at 2400 Valley Ave., No. 3, Winchester, Va. 22601.

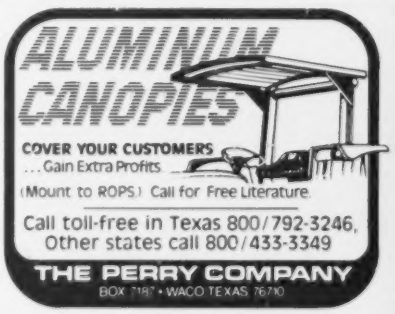
Hesston's '87: $42 Million Loss on $119 Million Sales

Hesston Corp., Hesston, Kan., reported a loss of $42 million on sales of $119.3 million for 1987. In the previous year, sales were $120.3 million and losses $42.9 million.

Fourth quarter sales of $15.3 million produced losses of $9.6 million, compared with the fourth-quarter 1986 volume of $31.5 million and losses of $11.7 million.

Mario Chessa, president, said that efforts to reduce dealer inventories in 1987 had brought them to nearly acceptable levels and that sales in 1988 are thus expected to improve. He added that discounting practices of the industry of recent years are expected to continue, but at lower levels, in 1988, and that while Hesston's operational results are thus expected to improve, they will not be profitable.

The company's move from Hesston, Kan., to Carol Stream, Ill., is expected to be completed in August 1988.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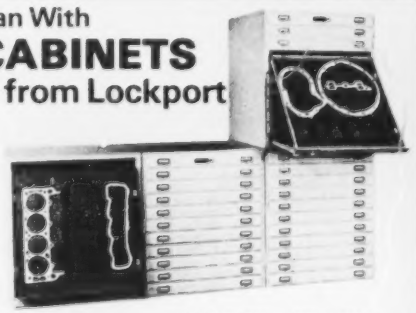

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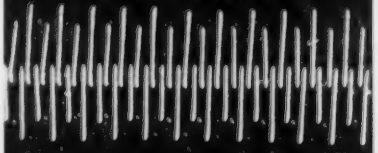

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Tractor Tire Update:

Low-Vibration Types Surge Ahead

Other trends include special versions for powered front-axle tractors, taller and narrower drive tires.

By Frank Buckingham

AFTER IMPROVED tractor cabs blocked out the noise of engines, transmissions and other components, operators began complaining about such discomforts as whole-tractor vibrations. Much of this problem was traced to the impact of tire lugs striking hard soil or paved surfaces during transport.

Tractor and tire engineers tackled the problem and Goodyear offered the first solution...long-bar/short-bar tires which squeezed in more lugs around the tire by placing short bars between longer treads. Other manufacturers soon offered their own low-vibration (LV) tires, some with combinations of long, medium and short lugs. Firestone engineer Bob Strandemo says Firestone bias-ply LV tires have different length treads, but they found they could avoid using long-bar/short-bar tread on *radial* tires by placing equal-length lugs closer together.

Closer lug spacing is the clue to reduced vibration. Close-spaced lugs keep more rubber touching the ground or road all the time and there's less slap or impact and reduced vibration as tread bars strike the surface. The problem is most severe when the combination of tire diameter, lug shape, spacing and depth and travel speed matches natural vibration frequencies of the tractor engine, transmission, power train, wheelbase, cab and other components.

THIS TIRE, Armstrong's Hi-Traction Lug R-1, is an example of long-bar, short-bar lug design. It comes in 52 sizes with inside diameters ranging from 24 to 42 inches and widths from 11.2 to 30.5 inches.

Close-spaced lugs reduce lateral and vertical tire vibration, smooth out the ride, and reduce "road wear" cupping of tire lugs. Some LV tires show better resistance to buckling and general tread wear. On some tire brands, symmetric positioning of long and short lugs reduces side-to-side sway sometimes encountered on certain tractors. In some tire company tests, LV tires increased tractor drawbar power and field capacity, improved tractive efficiency and reduced fuel consumption per acre compared with conventional tread designs.

One tire engineer said, "When we made field comparisons, long-bar/short-bar tires outperformed tires with traditional tread. We don't have enough tests or data to say they will do it every time. But, in that field, on that soil, with that moisture content and those surface conditions, those implements and

(See Tires, pg. 22)

Tires *(from page 20)*

the drivers we used, long-bar/short-bar tires did better."

Reading between the lines, one sees no clear across-the-board performance advantage for LV tires. In view of some other complaints discussed later, LV tires may outperform tires with traditional tread in some conditions, and fall behind elsewhere.

Regardless of lug configuration, reduced vibration at transport speed is the most commonly mentioned benefit of LV tires. In fact, vibration of some articulated tractors can become severe enough to threaten tractor stability at transport speeds.

Farm Tire Shipments, 1987-1990

	1987	% change from 1986	1988	1989	1990
Rears	825,000	+ 10.00%	825,000	790,000	800,000
(Radials)	68,000	+ 13.30%	75,000	80,000	95,000
Fronts	1,925,000	+ 9.89%	1,925,000	1,850,000	1,875,000

Source: Modern Tires Dealer magazine from estimates provided by Goodyear Tire & Rubber.

But Gary Stratton, tire/traction specialist at Deere's Waterloo Product Engineering Center, says the original design goal was to reduce tractor vibrations on hard soil in the field at speeds of 4 to 7 mph. He adds that lower vibration on the road at 12 to 22 mph was a secondary benefit. Deere engineers are often credited with developing the original long-bar/short-bar, LV tire design.

OEM and Replacement Tires

There's little or no price differential between newer-style LV tires and those with traditional tread. Some manufacturers have replaced all traditional tread designs with LV tread, at least for tires carrying their own brand. Certain replacement tires sold under co-op or house brands, with low price their chief selling feature, are still made with traditional tread.

Stratton says all U.S.-made Deere tractors are sold with LV tires, and about 35 to 40 percent of all Deere tractors are sold with radial tires. From 70 to 75 percent of bigger models such as the Deere 4850 go out with radial tires. Many combines are also being equipped with LV tires for smoother transport.

Ron Treanor, Armstrong's manager of large equipment tire engineering, says the LV tire market is driven by OEM sales, but the replacement market is growing too.

However, Strandemo of Firestone says farmers replacing tires on five to six-year-old tractors are unlikely to specify LV tires, noting, "Those tractors are apt to be pretty loose and noisy, and the operator is so accustomed to the shakes and rattles he doesn't think about benefits of a different tread type."

Deere's Stratton notes, however, that when farmers traded tractors every two or three years they seldom replaced drive tires, and were not too concerned about tread designs. But as tractors are now being kept longer, buyers are becoming more concerned about available options in both OEM and replacement tire designs.

Mud Problems?

Bill Simpson, tractor specialist at Case IH says he tracked one rainstorm from North Dakota to Pennsylvania by telephoned complaints about poor cleaning of new long-bar/short-bar tractor tires. However, Stratton says he's had only two or three secondhand comments about the problem, and no serious gripes. Armstrong's Treanor says closeness of lugs on LV tires can keep sticky mud from cleaning as well, but that the problem depends on lug angle and size and how the tire enters and leaves the track.

Strandemo says they've received complaints, but he believes mud-farmers are a small minority and that Firestone has no documented studies of the problem or plans to change tread designs. Some engineers think it may be a judgment call as to whether soil sticking is worse with LV tires than with conventional tread. They add that if soil is wet enough to stick in the tread it's probably too wet to be in the field anyway and farmers would be better off (less soil compaction) if they waited till soil dries more.

Some manufacturers are looking at modified LV tread designs with uneven lug surfaces to which less soil can cling, and at better cleaning as lugs exit the track in sticky soil. Treanor says that industry-wide, LV tires "will be *the* tire for general applications, but traditional tread designs may be retained for sticky soils."

Movement Toward Radials on Farm Tractors

Year	Replacement	OE
1986	7.9%	9.2%
1987	8.7%	11.7%
1988	9.1%	12.5%
1989	10.1%	14.0%
1990	11.8%	17.8%
1991	12.7%	18.5%
1992	14.5%	20.0%

Source: Modern Tire Dealer Magazine from industry estimates.

Some users also complain that close-spaced lugs on LV tires are unable to grip firm soils in heavy alfalfa sod as well as conventional tread. Traction depends on how well tires grip the surface on which they are operating. Pull on a smooth paved surface depends on total lug contact area, combined length of lug edges gripping the surface and weight on the tire.

On soil, lugs must be able to penetrate through loose material on the surface and grip firm soil, whether it's R-2 rice tires penetrating several inches of mud or R-1 tires working on hard-baked soil, heavy vegetation or mud. If spaces between lugs fill with soil or plant material, tires cannot grip and develop full traction.

Alternatives

Customers not ready or unwilling to replace drive tires may reduce tractor vibration by repositioning dual tires so that lugs on both tires of a pair do not strike the surface at the same time. Minor speed changes and proper tire inflation for the load can also reduce vibration on some tractors.

For lighter loads, taking off extra ballast and reducing tire inflation lets tires cushion tractor bounce and vibration when traveling on hard surfaces. (Removing unnecessary ballast also reduces soil compaction. But ballast adjustment is a task tractor makers need to make easier so that it gets done when it should be.)

Faster travel than rear tires, extra steering forces and the camber angle placed on front tires by Deere's FWA steering system all place special requirements on front tires of FWA tractors. Strandemo says performance requirements for typical drive wheel tires are (1) traction, (2) treadwear and (3) durability.

"But for FWA tires," he said, "we made treadwear number one. The extra stresses imposed on those tires, and the fact that they are out there where the operator can watch them all day long means they must perform 100 percent. Down-sized rear tractor tires are not good enough."

Indeed, smaller tires designed for lower-powered tractors have not been totally successful and tire manufacturers now offer radial tires designed specifically for front-wheel drives.

There's also a trend to taller, narrower drive tires with more and more 18.4 and 20.8-42 tires sold all the time. Primary advantage is reduced rolling resistance. Narrow tires waste less energy packing down loose soil, and cause less soil compaction compared with wider tires.

The longer, narrower footprint and hence total traction of taller tires is equal to or better than that of wider, smaller-diameter tires. Some 46-inch diameter tires are being imported for certain tractors and American tractor and tire manufacturers are testing 46-inch tires in larger sizes. There's even talk of 50-inch rims in the future.

Deere's Stratton says more tire diameter is generally preferable to increased width for more traction and that farmers insist 18.4 is the maximum practical tire width for use in 30 inch crop rows.

He cautions, however, that switching to tires with significantly larger diameter can change hitch geometry and performance.

Briefly...

Micro-Trak Systems, Inc., Mankato, Minn., has acquired the agricultural division of Pioneer Technology, Sunnyvale, Calif. This includes its PC-2 planter computer, which won *I&T*'s Design Award in 1985. Micro-Trak, acquired in 1985 by Taylor Corp., North Mankato, Minn., sells electronic devices to monitor field speed and area, spraying and harvesting.

What They're Saying...

Illiterate in International Affairs

Dr. Robert R. Spitzer, president of the Milwaukee School of Engineering, talked to the Farm & Industrial Equipment Institute recently about some overlooked basics.

Too many free-world citizens, especially Americans, are relatively illiterate in international affairs. Your industry problems are similar to our nation's problems. And I submit that neither you nor our nation have properly identified some of the real problems. We will not be able to resolve our national surface problems of global competition, product quality and reliability, world population growth, unemployment, high welfare, trade deficits and hunger until we identify the root problems. From my perspective, these are related to education, family and leadership weaknesses.

We must help people understand that their economic ignorance on major issues plays into our competitors' hands. Simultaneously, we must resolve the root problems that have been ignored or given only lip service for so long, problems that include strengthening moral and family values....

America needs more qualified engineering graduates if it is to compete with foreign business.

The Japanese emphasize engineering graduates more than we do in the U.S. Six percent of U.S. college graduates are engineers; in Japan, it's over 20 percent. In 1960, Germany, Japan and the U.S. spent about the same percentage of GNP on non-defense R&D. Today, the U.S. stills spends as much on all R&D as a percentage of GNP as Japan, West Germany and Britain, but almost half of ours is defense-related.

Dealer's View of Relationships

Earl Streacker, Findlay, Ohio, Ford dealer, talked at the convention of the Farm & Industrial Equipment Institute about the need for better relationships. He is president of the National Farm & Power Equipment Dealers Assn.

Because inventory is a key to profits, we urge you not to load up your dealers with unneeded equipment that will fade and rust.

We need to improve manufacturer/dealer relationships and keep each other better informed. We have common goals. You do well when we do well.

Dealers do appreciate manufacturers' pre-season interest waivers for customers, floor planning and other sales incentives. We'll also appreciate fewer price increases to pay for them. Our competition is fierce and your prices should be set accordingly to allow us a decent profit margain on the equipment we sell.

Future dealers will be more educated, more market-oriented, market-driven and finance-oriented. They will be knowledgeable about contract law, and will read and understand the fine print in government regulations, sales programs and dealer contracts.

We are all in this together. As our markets return, let us examine our new and changing markets and work together to develop newer and smarter ways of doing business, ways which will lead to improved profitability for everyone.